1 Envisioning North America

John Muir had a religious experience in the Yosemite Valley of California (Figure 1.1). After several years of college coursework in Wisconsin, Muir fled to Canada in 1863 with his brother to evade the Civil War draft, returning a few years later to work as a sawyer in Indiana, only to have his eye pierced in a work-related accident. Regaining his sight after six weeks of confinement in a dark room, Muir set out on a 1,000-mile hike from Indiana to Florida, where he intended to gain passage to South America to continue his journey, but instead succumbed to malaria on the Gulf coast and diverted his path to New York via boat, where he boarded a train to California.

Muir arrived in the Yosemite Valley in 1868 to see what he had until then only read about. Recounted in his book *First Summer in the Sierra* (1911), Muir observed what he called the "grandest of all

Fig 1.1 Panoramic view of the Yosemite Valley of California, one of the many spectacular vistas that inspired John Muir to devote his life to environmental preservation. Yosemite Valley in the summer with El Capitan, Half Dome, and Bridalveil falls in the background. Johan Viirok photo, 2011/Wikimedia.

special temples of Nature." Steep, sheer cliffs, cascading waterfalls, and shadowy vistas stirred his deepest emotions, reaffirming his belief in the divinity of nature. Muir was a devote Christian and thus predisposed to viewing nature as the work of God. And yet, he took divinity beyond common belief by bringing the supernatural – the divine – down to earth, so to speak. Without rejecting biblical doctrine, Muir went further, to suggest that earthly things were themselves spiritual, transcendent of the physical limits of nature. For Muir and those who influenced his thinking – notably Henry David Thoreau and Ralph Waldo Emerson – going to the mountains was like going to church.

Living as he did in the age of frontier expansion, Muir had good reason to believe that his "church" was in danger. He was particularly concerned about overgrazing of grassland in Yosemite and authored articles for popular magazines denouncing any land-use practices that would impact what he considered "pristine" land. Muir's many writings inspired others to join his crusade to preserve nature. He successfully petitioned the US Congress to pass the National Parks Bill in 1890, establishing Yosemite and Sequoia National Parks. Two years later he co-founded the Sierra Club, an environmental advocacy group with more than 1.3 million members today. His many other contributions to wilderness preservation are unparalleled in US history, and memorials to his life can be found in national parks, in the names of mountains and trails, and in a commemorative day in California (April 21).

As influential as Muir was in establishing the preservation movement in the USA, he was bound to encounter opposition from individuals, agencies, and governments seeking a foothold in the economic opportunities of a burgeoning nation. Adversity in this respect sometimes came from unsuspected sources. In 1896 Muir established a relationship with Gifford Pinchot, who nine years later would become the first chief of the US Forest Service. Pinchot was a leader in the *conservation* movement, an approach to nature that promoted sustainable use of resources for the benefit of people. His perspective ran counter to the *preservation* movement, championed by Muir, which held that wilderness should be set aside from any human use other than visitation. Both men criticized reckless exploitation of natural resources, but Pinchot's approach was far more utilitarian than Muir's, being responsive to the nation's growing demand for timber and fuel.

Born on a farm near Detroit in the same year that Muir fled to Canada was the son of William and Mary Ford. Growing up to become one of America's greatest industrialists, Henry Ford died 83 years later with enormous wealth, power, and renown. He is credited with building an automobile industry that fundamentally changed not only the way products were made, but also how they were marketed and consumed. Ford was a gifted innovator of production, perfecting an assembly line approach to reduce costs while increasing output (Figure 1.2). He wanted to create products, like the Model T automobile, that everyday people could afford, and he ensured that hope for his own laborers by paying them higher-than-average wages. He even created a franchise system to establish dealerships across first the country, then the world. In Ford's vision, peace and prosperity came from consumerism, an economy and society of robust purchasing and consuming, driven, theoretically, by the free choice of buyers in an open market (Figure 1.2).

The way Ford envisioned nature was very different than the way Muir viewed nature. We will grant that Ford may have been just as awestruck as Muir by nature's wonders, such as the waterfalls of

Fig 1.2 Workers in Highland Park, Michigan pull together magnetos and flywheels for 1913 Ford autos at the first moving assembly line. Wikimedia.

the Sierra. However, Ford devoted much of his life to transforming nature (or tapping into its potential) through technology, including the tools used to make vehicles (the transformation of matter and energy), and the vehicles themselves, tools for people to move farther and faster than their biology allowed, thus saving time and personal energy for other pursuits. Ford was a Christian, but he rarely made public statements with regard to religion. It is hardly controversial to suggest, nonetheless, that he felt comfortable with the idea that God granted dominion over nature to humans who were faithful and righteous, as well as the notion that people were directed from above to go forth and prosper. The mid-eighteenth-century notion that came to be known as *Manifest Destiny* was informed by these same beliefs, a mandate to expand out and subdue nature (including, by mid-eighteenth-century logic, Indians) for the sake of God and Country (Figure 1.3). In Aldous Huxley's 1932 classic, *Brave New World*, society is organized by the principles of Fordism, and the years are dated AF (or *Anno Ford*), in the Year of Our Ford. In a *Brave New World*, capitalism and piety had morphed into one.

Wrapped up in the growth and prosperity of their fledgling nation, nonnative American people attributed their motives to godly causes, and enabled their actions through a variety of technological

Fig 1.3 The 1872 painting by John Gast, *Spirit of the Frontier*, is a visual allegory of Manifest Destiny, the doctrine of progress for a fledgling nation. The mythical goddess Columbia leads her people westward with innovations like the railroad and telegraph, displacing, along the way, indigenous people and the bison of their homeland. Wikimedia.

innovations: the steam engine, railroad, revolver pistol, barbed wire, cotton gin, telegraph, sewing machine, and, later, the motorcar, among others. It is not difficult, from a modern, western perspective, to look back over the recent history of North America and be awestruck by the "progress" technology enabled. And it follows that we tend to ascribe a great deal of explanatory power to technology in our narratives about social and cultural change. For the German intellectual Karl Marx, technology reveals a human's relationship to nature, but also to other humans (through labor arrangements and class relations), and to the ideas that motivate or suppress action. So influential was Marx in shaping western thinking about technology that his theory came to be a central theme in anthropological understanding of cultural variation and change. The ethnographer Julian Steward (1955), for instance, developed the concept of *Culture Core* to describe the technological articulation between humans and the environment among nonwestern people, using as examples the Shoshone Indians of the Great Basin. For Steward, the entirety of Shoshone culture could be explained as Core, with them devoting most of their time, energy, and thought to the pursuit of food.

Confronting an archaeological record dominated by tools and the by-products of their manufacture and use, students of the ancient past in North America found utility in Steward's manner of thinking. Through stratigraphic excavations that revealed changes in technology over time, archaeologists began to assemble a narrative with themes familiar to western history. The notion of *progress* crept in as histories of innovations such as groundstone, pottery, and irrigation were portrayed as *improvements* over less efficient or effective antecedents. Only rarely was a change in technology seen as energetically neutral or inconsequential. The trouble with thinking such as this is that the technology itself becomes the agent of change, as in the computer HAL in *2001: A Space Odyssey*, or Skynet's AI network in the *Terminator* movies.

Social scientists refer to the tendency to imbue technology with powers it does not actually have as *technological fetishism* (i.e., the worship of technology). This is hardly a conscious decision in most cases, but rather an example of the human tendency to simplify complex phenomena, in this case explanations for change. To fetishize technology is to endow technology with the power to solve problems: grow economies, save time, cure disease, and the like. Surely the technologies are

real, and they can be compared with alternatives to measure relative costs, benefits, efficiencies, and capacities. But there is little in those metrics that helps to understand how technological change relates to culture change. We may assume that a more efficient technology, if made available, would quickly be adopted and used, but in the particular historical context in which the innovation arises, its adoption and use is contingent on factors beyond energetic efficiency. The slow, bumpy road to electric cars in North America attests to the contingencies of the internal combustion market Ford and others created.

Technological fetishism and Manifest Destiny go hand in hand in the logic of western progress, and archaeological narratives have been influenced by these concepts. It is the narrative of technological dominion over nature in the future that Muir feared the most. Technology in this sense was not merely the way humans ensured their survival, but also the means by which they grew immensely in scale and complexity. It follows that a preoccupation with technology has structured our view of nature in general, and let us think of the North American past as *prehistory*, where "primitives," thought to lack the capacity to overcome nature's constraints, were simply slaves to nature, nothing more than a Culture Core. Underpinned by racist logic since at least the Middle Ages, this view of the primitive made it hard for western observers to see anything progressive in the archaeological record of North America, or, if they did, to attribute progress to the achievements of men like Henry Ford. Even when great technological innovations were recognized, fetishism would hold the tools themselves responsible.

Ironically, North American archaeology has entered a new era of theorizing about the past in which objects, places, and nonhuman organisms are endowed with spirits and powers, the ability to evoke or prevent actions on the part of humans. Called *post-humanism* by some theorists (Wolfe 2009), this novel thinking has a counterpart in activism which strives to remove humans from the top of the Great Chain of Being, suggesting they have no inherent right to destroy nature or set themselves above it (Harris and Cipolla 2017). The philosophy is consistent with John Muir's thinking, as it is with native North Americans who find spirituality in all manner of being. And it runs counter to the dominant themes of western philosophy since the Enlightenment and continuing through the time of Ford, in which technological change, as a measure of progress, explains everything.

If Muir was too romantic and Ford too ambitious, then Pinchot strikes a pragmatic middle ground. All people in all times and places have practical needs that must be met. In some theories of change, the process of meeting these needs is invisible and participants are dupes in a selective process about which they know nothing. In other theories, change comes from people bouncing into each other and sharing ideas. Such encounters are certainly the source of something new, but if followed to its logical conclusion, this process tends to subdue cultural diversity, as we are witnessing today through globalization. And yet in other theories, interactions produce novel results, increase cultural diversity, and thus enhance resiliency in the face of change. In these settings, human imagination and creativity abound, and technologies are conscripted into service far beyond their intended purposes.

Our theoretical tendency in writing this book is to allow multivocal histories to emerge from the juxtaposition of different ways of thinking, including nonwestern thought. We have our own biases, which will no doubt show, but we also recognize that different ways of seeing the world – as in the contrast between Muir and Ford – produce new forms of knowledge. In this sense, we turn now to an overview of the physical aspects of North America salient to a variety of theoretical approaches in archaeology.

Getting to Know a Continent

Few individuals get to know North America by traveling about the entire continent, although extraordinary people like John Muir have always existed and always will. The rest of us know about the landscapes of North America from description and imagery, such as paintings, photographs, and especially film, television, and the Internet. Maps of course figure prominently in our representation of geography. Most maps are two-dimensional projections of three-dimensional space and are thus never entirely realistic. In addition, maps are constructed at varying scales, from different perspectives, and with select features, such as ground cover, topography, bodies of water, or buildings and roads. In this sense maps vary with intent or purpose. Maps are also static, unlike films, and cannot effectively capture motion in real time.

Modern technology opens up perspectives on geography that no paper map can supply. Regular users of the Internet are familiar with Google Earth, a virtual globe created by superimposing digital satellite imagery and aerial photography to project interactive coverage of the earth's surface (Figure 1.4). Introduced in 2005, Google Earth is available free of charge for noncommercial users, like university students. If you can, go to a computer, tablet, or smartphone now and open Google Earth. In the latest (2020) version, the globe appears in full form against a dark but starry backdrop and rotates slowly in a counterclockwise direction, true to form. In an earlier iteration, Google Earth automatically rotated the globe so that North America was front and center. As you zoomed in on this older version the borders and names of US states emerged. As you zoomed in farther, the roads and buildings of Kansas appeared and ultimately the town of Lawrence, home to the University of Kansas and its Jayhawks. Given its geographic centrality in Google Earth, one might assume that Lawrence sits at the center of the continent, but that is not exactly the case, at least not by most calculations. If defined as all land north of South America, North America has a center point somewhere in North Dakota. The specific location depends, of course, on the boundaries

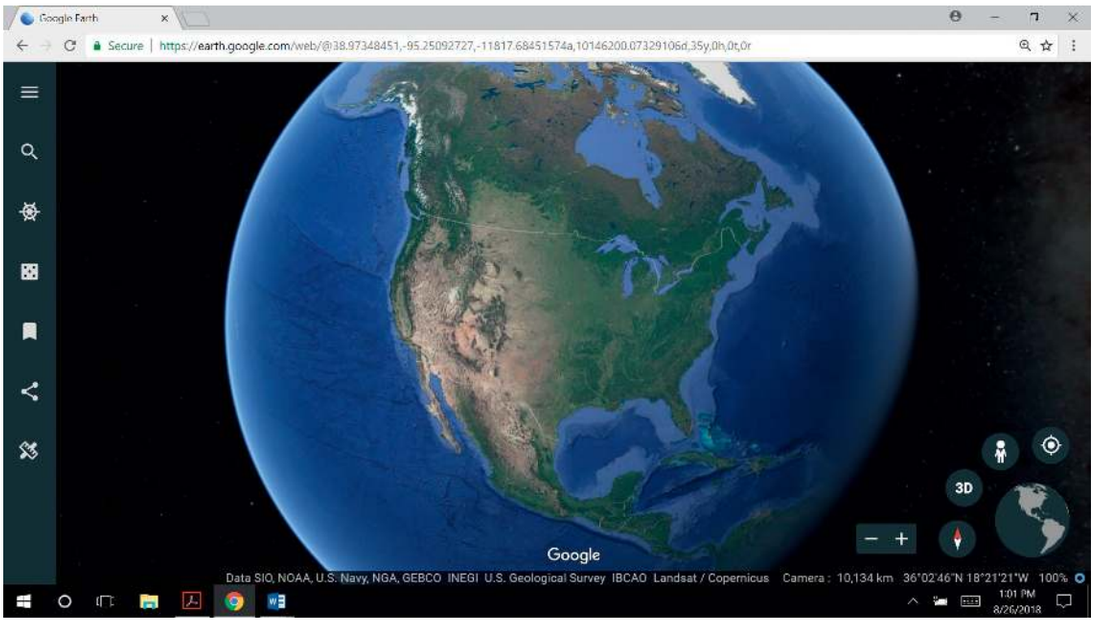

Fig 1.4 The North American continent as seen in the digital satellite imagery of Google Earth.

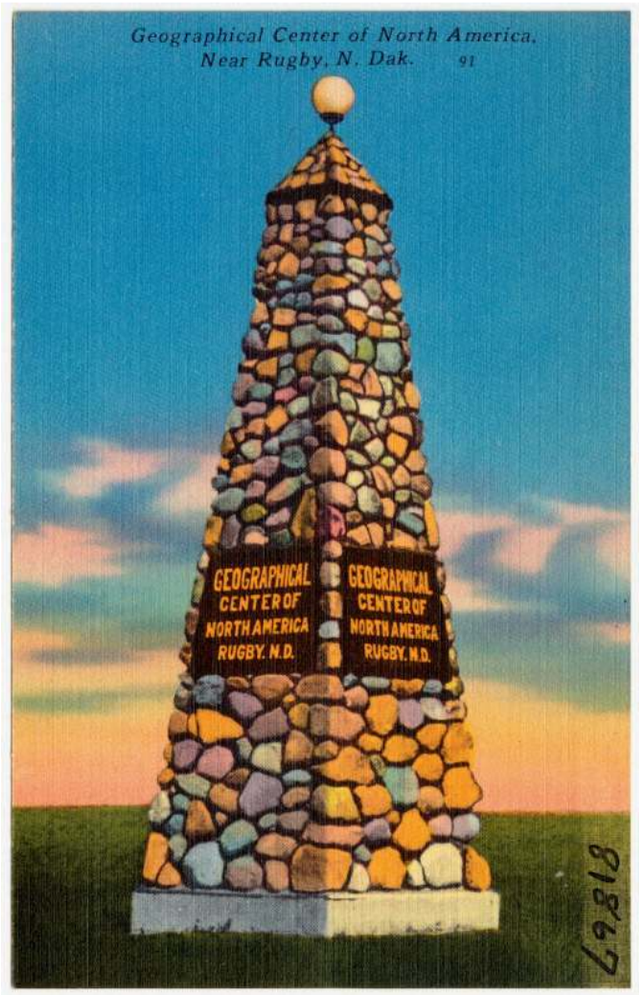

Fig 1.5 Postcard from the 1930s of the monument emplaced at the purported geographical center of North America in Rugby, North Dakota. Wikimedia.

one recognizes. In fact, North Dakotans have feuded over claims to geographic centrality since 1932, when citizens in the town of Rugby erected a 21 foot tall obelisk to mark the spot (Figure 1.5). Townspeople in nearby Orrin and Balta have ever since raised objections, as their towns are closer to the center than is Rugby, by some calculations. By yet other calculations, the continental midpoint is actually a small slough outside town (it too the recipient of a monument of piled stone that was later flooded).

Lawrence, Kansas no longer assumes geographic centrality in Google Earth, but it will do as a starting point for touring the continent. At about 260 m (853 ft) above mean sea level (amsl), Lawrence, Kansas is a little more than one-third the average elevation in North America (720 m [2362 ft] amsl). We will both ascend and descend in elevation as we traverse the virtual continent, starting off in what was Shawnee reservation land before the Kansas territory was opened for settlement in 1854.

Head North

We begin by expanding our perspective. But first select the "Everything" option in the "Map Style" of the pulldown menu of Google Earth to display borders and other landmarks for our journey. Next type "Lawrence, Kansas" into the search engine and you will be taken to our starting point. Now, zoom out until town and county borders disappear, but you still see state borders and names. Now simply key the "up" arrow to move north across the landscape, toward Canada and the Arctic Circle. You will first ascend the Missouri River, passing over Omaha and the southern Iowa Drift Plain with its rolling tallgrass plains of wind-blown silt (loess) and glacial till. Central Iowa marks the southern extent of Ice Age glaciers when humans arrived in the midcontinent some 14,000 years ago (it was even farther south during the last glacial maximum, roughly 21,000 years ago). The landscape from this point northward was therefore uninhabitable until glacial ice receded over the ensuing millennia. As it had done in previous eras, ice receded as

the climate warmed to expose not simply land, but a landscape of moraines, drumlins, glacial lakes, and outwash plains such as the one in southern Iowa.

Travel a bit farther north in Google Earth and you will enter the state of Minnesota, where glacial lakes and moraines abound. You will also notice a second major river coming into view from the east, on which the city of Minneapolis lies. This of course is the great Mississippi River, North America's largest drainage system. The upper portion of the river is an entrenched, multi-channel river with many bars and islands. As we will see later, 4,000 km (2,500 mi) to the south the river empties into the Gulf of Mexico in flat, swampy terrain vastly different than the postglacial landscape to the north. The Mississippi River not only connects these very different places, it is responsible for much of the difference. Silt and clay from once-glaciated land has eroded over the millennia and been transported by the river from northern glacial plains to southern floodplains, levees, and related features, feeding some of the most productive farmland in the world. Some of this displaced sediment eventually made its way to the mouth of the river, the Mississippi Delta, home to New Orleans.

As you move into south-central Canada you will notice to the west a series of large, elongated lakes. The largest of them is Lake Winnipeg, a 24,500 km^2 (9,500 mi^2) freshwater body that is among the remnants of a glacial lake known to geologists as Lake Agassiz (Figure 1.6). When it formed from meltwater at the end of the Ice Age, Lake Agassiz held more water than is contained in all the lakes of the world today. It of course has since been drained considerably, with much of its water escaping through waterways heading north, but some into the Mississippi River via the ancestor of one of its tributaries, the Minnesota River. A postglacial process known as *isostatic rebound* (the rise of land that was depressed under the weight of glaciers) is partly to blame for the draining of Lake Agassiz, and, as we will see later, other changes in northern terrain that affected patterns of human settlement. Off the view of Google Earth to the east are the Great Lakes, a series of five interconnected lakes that today comprise the largest body of freshwater in the world. Like Lakes Winnipeg, Manitoba, and numerous other glacial lakes, the Great Lakes formed from meltwater but they filled more slowly and in deeper basins (more than 400 m [~1,300 ft] in Lake Superior) than most others,